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October 3, 2008

Mr. John Petrone
NCDENR Solid Waste Section
Winston Salem Regional Office
585 Waughton Street
Winston Salem, North Carolina 27107

RE: Wilkes County Department of Solid Waste
Wilkes County MSW Landfill
Alternate Cover Material
JEI Project No. 356.00, Task 36

Dear Mr. Petrone:

In response to your comment letter dated September 22, 2008, regarding Wilkes County Alternate Cover Material (ACM) JEI submits the following information which serves as an amendment to the original submittal. Per our conversation with NCDENR and the County, the original submittal is being amended to remove the request for a demonstration of New Waste Concepts Products, Inc (NWCI). The following responses refer only to utilizing tarps at the Wilkes County Landfill. The AMCs by New Waste Concepts will be addressed at a later date. For clarity, the comments from your letter are provided below in *italics*, followed by our responses.

GENERAL COMMENTS:

- The period of time in the request for ACM demonstrations is listed as two months, alternating tarps and New Waste Concepts products. The Section requires a demonstration period of six (6) months per ACM. The time allotted allows for performance evaluation of the ACM's as per various site, seasonal, and weather conditions, employee training in relation to ACM application, etc.*

JEI feels that tarps can be sufficiently evaluated with a demonstration period of 30-45 days. This will give ample time to evaluate the technology that have been proven to work at other facilities in the State. A demonstration period of six months would be excessive and require the County to absorb undue additional costs to implement. Also, a 30 day demonstration period is in keeping with other demonstrations previously approved by the department.

2. *As to the complexity of the demonstration and the need to prove that the facility can manage ACM in a manner that allows it to meet the performance standards stated in 15A North Carolina Administration Code (NCAC) 13B .1626(2)(b) and maintain compliance with other operational requirements of the law, it is recommended that the County and Joyce Engineering, Inc. consider separate subsequent demonstrations.*

The county intends to use tarps exclusively during the demonstration period allotted. Soil will be used on an as needed basis throughout the demonstration period as stated in the contingency sections for ACMs in the Operations Plan. Once the demonstration is completed and if tarps are approved, Wilkes County may elect to use tarps and a soil combination depending on the lessons learned during the demonstration. The final operations plan will detail this procedure if it is elected for use by the County.

3. *The alternate cover material request letter submitted to this office does not clearly state why the date of September 1, 2008 is listed as an intended start date (to demonstrate ACM) when October 6, 2008 is listed as the starting date. The facility shall not start the use of any ACM without the written approval of the Section. Such action will result in a Notice of Violation (NOV) and a request for civil penalty assessment.*

The original intended start date for the demonstration was October 6, 2008. Wilkes County understands that the demonstration cannot begin without approval from the Department, however the County would like to begin their demonstration of tarps as soon as possible.

4. *Please clarify who will be completing the evaluation forms for each ACM during the demonstration periods. Provide a description of how the material will be evaluated in regards to each performance standard. Furthermore, it is not clear how a rating system of 1-5, with 5 being poor and 1 being excellent, corresponds to the minimum requirements of the law. Although Section staff will periodically inspect the facility during the demonstration, it is recommended that a third party also provide evaluation of the material being used.*

The evaluation forms will be completed by the County Landfill Supervisor or other qualified party appointed by the County if the Landfill Supervisor is unavailable. The Performance Evaluation Form is similar to that used in previous demonstrations approved by the department. If the Department would like to use a different rating system or include additional information please advise us of the preferred method. A representative from Joyce Engineering will visit the site one (1) time during the demonstration period) in order to evaluate tarps and document their use.

5. *It is unclear if the demonstration request is to use only the listed ACMs during the demonstration periods or to what extent soil will be used. Clarify how and when it will be determined to use soil as a daily cover.*

As stated in the contingency plan of Sections of 4.4.2.1-Tarp Cover System, Application Procedures, soil may be used when conditions are not favorable for the ACM. Actual

weather conditions preventing the use of the ACM are dependent on the application procedures and staff at the landfill. Provisions for actual conditions when the ACM should not be used will be determined throughout the demonstration period and included in the final submittal of the Operations Plan if the Department requires clarification.

6. *Additional detail must be provided outlining what areas (slope ratios) of the landfill the ACMs will be used in order for them to be adequately assessed.*

The ACM will be used on various slopes of the working landfill. The demonstration period will allow the County and Department to assess the performance of the ACM over a range of site conditions and make and needed provisions to the Operations Plan.

7. *Provide additional information on the employee training program to be provided by the manufacturer (New Waste Concepts, Inc). Also state how many staff will be trained, what number of trained personnel will be required to be on duty at any given time, etc.*

NWCI products will be addressed at a later date.

8. *The contingency plans are not adequate. Plans must describe, in depth, what will happen if ACMs cannot be used and ACMs fail. They should outline what will occur when/if the demonstration ends for any reason other than of the approved time period expiring. And the contingency plan must address staffing shortages, equipment failure, etc.*

As stated in the contingency plan of section 4.4.2.1-Tarp Cover System, Application Procedures, soil may be used when conditions are not favorable for the ACM. The demonstration period will allow the County to assess various site, personnel, and weather conditions. If unfavorable conditions for the ACM are found, soil will be used as a backup. Provisions for actual conditions when the ACM should not be used can be determined throughout the demonstration period and included in the final submittal of the Operations Plan if the Department needs clarification. Should the ACM be found unable to maintain compliance with the standards stated in the North Carolina Administration Code (NCAC) 13B .1626(2)(b), the demonstration for the ACM will be discontinued and results of such action provided in the final report.

9. *There appears to be a discrepancy (typo) regarding the maximum daily coverage data (regarding facility airspace) listed on page 2 and that of data listed on page 3.*

The discrepancy has been corrected; the working face averages 5,000 square feet.

TARPS:

1. *Provide detailed information related to the specific type(s) of tarps that are being proposed. This should include manufacturer information as to material type, tarp size, durability, etc.*

Operations Plan, Section 4.4.2.1-Properties of Tarps, has been updated to include manufacturer information and details relating to tarp specifications.

2. *Provide additional detail regarding how and when the tarps will be stored (when not in use) and applied (when used). This should include how the tarps will be applied and anchored after they are implemented.*

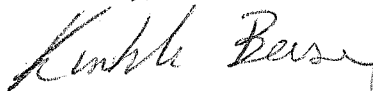
Operations Plan Section 4.4.2.2-Tarp Cover System Application Procedures has been updated to include additional information for the inspection, installation, and anchoring of tarps. The demonstration period will allow the County to work with the Department in establishing methods for anchoring the tarps. In addition, Material Equipment and Storage has been updated to include storage of tarps "Tarps will be stored adjacent to the working face in a County designated area that will not conflict with daily haul and disposal operations".

3. *Provide information detailing how the facility will manage the ACM demonstration and continue to manage other activities at the landfill (will extra staff be needed or will facility staff be pulled from other activities, etc.).*

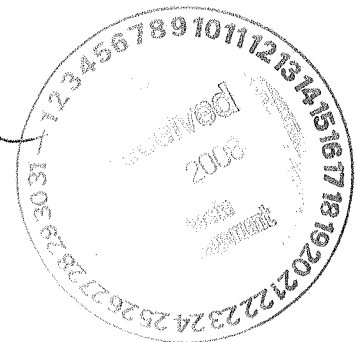
The County landfill operations will not change during the demonstration period. Among the goals of the demonstration are to utilize products that will reduce the amount of labor and materials that are required to perform the required work of covering the waste. Therefore, no additional staff will be required. At the time of daily cover application, the staff which would typically load, haul and spread the soil cover will apply the ACM.

On behalf of Wilkes County, JEI appreciates the opportunity to clarify these issues related to the use of alternate cover materials. Please do not hesitate to contact me to discuss these responses to your comments at (336) 323-0092 or by e-mail at kbenson@joyceengineering.com.

Sincerely,



Kimberlee Benson, EIT
Project Consultant



Enclosure: Alternate Cover Material Performance Evaluation Form
 Wilkes County Operations Plan Section 4.4 "Alternate Cover Material"

C: Mark Poindexter, Field Operations Branch Head
 Jason Watkins, Central District Supervisor
 Donald Herndon, Acting Compliance Officer
 Kent Brandon - Director, Wilkes County Solid Waste
 Phil Greene - Landfill Supervisor, Wilkes County Solid Waste



WILKES COUNTY MSW LANDFILL **ALTERNATE COVER MATERIAL PERFORMANCE EVALUATION FORM**

| | | |
|--------------------------|--------------------|---------------|
| DATE: | WEATHER CONDITIONS | ACM MATERIAL: |
| | WIND DIRECTION: | |
| LANDFILL FOREMAN: | WIND SPEED: | |
| | TEMPERATURE: | |
| LANDFILL SUPERINTENDENT: | PRECIPITATION: | |

Rank the performance of the Alternate Cover Material (ACM) based upon the following attributes:

| | | |
|---|---|-----------------------|
| Vector Control: Ability to resist vectors | Excellent Poor 1 2 3 4 5 | Comments: |
| Odor Control: Odor control from ACM covered surface | Excellent Poor 1 2 3 4 5 | Comments: |
| Litter Control: Ability to minimize litter | Excellent Poor 1 2 3 4 5 | Comments: |
| Scavenging Control: Ability to prevent scavenging | Excellent Poor 1 2 3 4 5 | Comments: |
| Erosion Control: Ability to control erosion | Excellent Poor 1 2 3 4 5 | Comments: |
| Appearance: Overall appearance of entire applied area | Excellent Poor 1 2 3 4 5 | Comments: |
| Fire Control: | Describe any fire event that may have occurred and the impact of the ACM cover and equipment, if any. | |
| Additional Comments: | | |

4.4 Alternate Cover Material

One alternate cover material (ACM) method is described in this section; tarps. The ACM shall provide control for disease vectors, fires, odor, blowing litter, and scavenging. An ACM in addition to soil may be used daily. Through a NCDENR Solid Waste Section demonstration period completed on _____, the ACM has been determined to provide an equal or better element control as soil.

4.4.1 Tarps

Tarps are proposed as an ACM. The tarps will be placed either manually or by using equipment. Tarps will not be used on any waste area that will not receive additional waste over a 24 hour period.

4.4.1.1 Properties of Tarps

Tarps shall be Fabrene TGNP3N3M or equal (manufacturer data sheet is included in Appendix V-2) and have properties as follows:

| | |
|---------------------------|--|
| Unit Weight | 9oz/yd ² |
| Warp Construction | 23.9 Tapes/in (Warp) 16.0 Tapes/in (Weft) |
| Tensile Grab Strength | 495 lbf (Warp) 326 lbf (Weft) |
| Tear Strength (tongue) | 135 lbf (Warp) 152 lbf (Weft) |
| Tear Strength (trapezoid) | 162 lbf (Warp) 107 lbf (Weft) |
| Coating Thickness | 1.5 mil |
| Mullen Burst Strength | 609 psi |
| Nominal Thickness | 20 mil |
| Dimensions | 48'-0" x 50'-0" (approximate) |

Tarps shall be coated on two sides with low density polyethylene and will contain ultraviolet inhibitors.

4.4.1.2 Tarp Cover System Application Procedures

Procedure for Inspecting Tarps

The tarps are inspected for tears each morning and afternoon. Should a tear be found in the tarp, an attempt will be made to repair the area by stitching the material. If repair is inadequate or cannot be made, the tarp will not be used on the working face.

Application Procedure for Placement of Tarps

Application of the tarp will employ the following minimum procedures:

- Visually inspect working face to ensure that no sharp objects are protruding from the compacted waste which may tear the tarp;
- If necessary, run compactor or tracked machine over any protruding obstructions;
- Deploy tarp onto the landfill face by attaching the two leading corners of the tarp to equipment via rope or integrated D-rings. Final placement is completed by hand to ensure proper coverage;
- Place additional tarps as needed to adequately cover working face;
- Anchor tarps with approved method;
- The tarps will be visually inspected following placement to ensure that uplift will not occur; and,

- Soil will be placed over any areas of exposed waste and/or inadequate coverage.

Maximum Daily Area Coverage

Based on the 2008 Airspace Analysis Report:

- Annual waste disposal rate (MSW only) = approximately 54,300 tons
- Operating days per year = 303 days;
- Approximate daily waste disposal rate = 179 tons In-place density = 901 lbs/cy of MSW per cubic yard;
- Daily cubic yards disposed = daily waste disposal rate / in-place density = 397 cy or 10,728 cf
- The working face will be restricted to the smallest area feasible; and
- The working lift is typically 2-3 feet high. Based on a working lift thickness of 2 feet, the working face area averages 5,000 square feet (daily cubic yards disposed / working lift thickness), which is equal to the daily coverage area.

Any additional areas of uncovered waste will be covered each day with 6 inches of soil.

Daily Depth and Quantity to be Applied

N/A

Average Monthly Volume of Daily Cover

N/A

List of Equipment

Equipment utilized for Tarps consists of:

Dozer, Loader, or other equipment available on-site will be the equipment used for the tarp installation.

Material and Equipment Storage

Tarps will be stored adjacent to the working face in a County designated area that will not conflict with daily haul and disposal operations.

The equipment will be stored in a County designated area that will not conflict with daily haul and disposal operations.

Wet Weather Operation

The tarping wet weather operation will be similar to operations the County currently follows when using soil as daily cover during wet weather.

Contingency Plans

If, for any reason, the County cannot use tarps as ACM material; soil will be used.

Screening Criteria

N/A